AMENDMENT TO THE CLAIMS

1. (Currently Amended): A method of reducing the sulfur content of a liquid catalytically cracked petroleum fraction, which comprises catalytically cracking a petroleum feed fraction comprising a heavy hydrocarbon oil feed containing organosulfur compounds under catalytic cracking conditions of elevated temperature in the presence of ~~a~~ an equilibrium cracking catalyst and a product sulfur reduction catalyst which comprises a porous molecular sieve having a metal component which is within the interior pore structure of the molecular sieve and which comprises vanadium in an oxidation state greater than zero in a matrix comprising alumina or silica-alumina with clay, to crack the heavy hydrocarbon feed to lighter liquid cracking products of reduced sulfur content.

2. (Original): A method according to claim 1 in which the cracking catalyst comprises a large pore size zeolite.

3. (Original): A method according to claim 2 in which the large pore size zeolite comprises a faujasite.

4. (Cancelled)

5. (Currently Amended): A method according to claim 442 in which the large pore size zeolite comprises zeolite USY.

6. (Currently Amended): A method according to claim 442 in which the large pore size zeolite comprises zeolite beta.

7. (Currently Amended): A method according to claim 442 in which the intermediate pore size zeolite comprises zeolite ZSM-5 or MCM-49.

8. (Currently Amended): A method according to claim 442 in which the molecular sieve component has an alpha value of at least 10.

9. (Currently Amended): A method according to claim 4~~4~~2 in which the product sulfur reduction catalyst comprises a USY zeolite having a UCS of from 2.420 to 2.455 nm, an alpha value of from 0.2 to 300 and a bulk silica:alumina ratio of at least 5.0 as the molecular sieve component and, as the metal component, at least one of zinc or vanadium in an oxidation state greater than zero.

10. (Original): A method according to claim 1 in which the sulfur reduction catalyst is a separate particle additive catalyst.

11. (Currently Amended): In a fluid catalytic cracking process in which a heavy hydrocarbon oil feed comprising organosulfur compounds is catalytically cracked to lighter products by contact in a cyclic catalyst recirculation cracking process with a circulating fluidizable catalytic cracking catalyst inventory consisting of particles having a size ranging from about 20 to about 100 microns, comprising:

(i) catalytically cracking the heavy hydrocarbon oil feed in a catalytic cracking zone operating at catalytic cracking conditions of elevated temperature by contacting feed with a source of ~~regenerated~~ equilibrium cracking catalyst to crack the heavy hydrocarbon oil feed to lighter products and produce a cracking zone effluent comprising lighter cracked products and spent catalyst containing coke and strippable hydrocarbons;

(ii) discharging and separating the effluent mixture into a cracked product rich vapor phase and a solids rich phase comprising spent catalyst;

(iii) removing the vapor phase as a product and fractionating the vapor to form liquid cracking products including gasoline;

(iv) stripping the solids rich spent catalyst phase to remove occluded hydrocarbons from the catalyst;

(v) transporting stripped catalyst from the stripper to a catalyst regenerator;

(vi) regenerating stripped catalyst by contact with oxygen containing gas to produce regenerated catalyst; and

(vii) recycling the ~~regenerated~~ equilibrium catalyst to the cracking zone to contact further quantities of heavy hydrocarbon feed, the improvement which comprises reducing the sulfur content of a gasoline portion of the liquid cracking products, by catalytically cracking the feed fraction at elevated temperature in the presence of a product sulfur reduction catalyst which comprises a porous molecular sieve having a metal component which is within the interior pore structure of the molecular sieve and which comprises vanadium in an oxidation state greater than zero in a matrix comprising alumina or silica-alumina with clay, to produce liquid cracking products of reduced sulfur content.

61

12. (Original): A method according to claim 11 in which the cracking catalyst comprises a matrixed faujasite zeolite.

13. (Cancelled)

14. (Currently Amended): A method according to claim ~~13~~43 in which the large pore size zeolite of the product sulfur reduction catalyst comprise zeolite USY.

15. (Previously Amended): A method according to claim 14 in which the product sulfur reduction catalyst comprises a USY zeolite having a UCS of from 2.420 to 2.455 nm, an alpha value of from 0.2 to 300 and a bulk silica:alumina ratio of at least 5.0 as the molecular sieve component and, as the metal component, vanadium in an oxidation state greater than zero selected from zinc or vanadium, the zeolite being in a matrix of alumina or silica-alumina with clay.

16. (Original): A method according to claim 11 in which the molecular sieve component has an alpha value of at least 0.2.

17. (Original): A method according to claim 11 in which the sulfur reduction catalyst is a separate particle additive catalyst.

18. (Original): A method according to claim 17 in which the cracking catalyst comprises zeolite USY and the separate particle additive catalyst comprises zeolite USY.

19. (Original): A method according to claim 11 in which the gasoline product of reduced sulfur content is a gasoline boiling range fraction which has a sulfur content lower than that achieved in the absence of the product sulfur reduction catalyst.

Claims 20-35 (Cancelled)

36. (Currently Amended): A method of reducing the sulfur content of cracked liquid petroleum fractions produced by cracking a petroleum feed fraction containing sulfur in the presence of ~~a~~ an equilibrium catalyst composition produced by introducing vanadium into a catalyst composition comprising a zeolite in a matrix comprising alumina or silica-alumina with clay, to exchange the vanadium onto the zeolite in a valence state greater than zero, calcining the catalyst composition to form the catalyst composition and catalytically cracking the petroleum feed fraction containing the organosulfur compounds at elevated temperature in the presence of the calcined catalyst composition to produce liquid cracking products of reduced sulfur content.

37. (Currently Amended): A method according to claim ~~32~~36 in which the zeolite of the cracking catalyst comprises a large pore size zeolite having cracking activity.

38. (Currently Amended): A method according to claim ~~33~~37 in which the large pore size zeolite comprises zeolite USY.

39. (Currently Amended): A method according to claim ~~34~~38 in which the zeolite comprises a USY zeolite having a unit cell size from 2.420 to 2.455 nm, an alpha value of from 0.2 to 300 and a bulk silica:alumina ratio of at least 5.0 as the zeolite.

40. (Currently Amended): A method according to claim ~~32~~36 in which the catalyst composition is formed as a fluidizable catalytic cracking catalyst capable of reducing the sulfur content of liquid cracking products of the petroleum feed, comprising fluidizable particles having a size ranging from about 20 to about 100 microns of USY zeolite having a unit cell size from 2.420 to 2.455 nm, an alpha value of from 0.2 to 300 and a bulk silica:alumina ratio of at least 5.0 which contains the vanadium within the interior pore structure of the USY zeolite in an oxidation state greater than zero.

41. (Currently Amended): A method according to claim ~~36~~40 which contains from 0.2 to 5 weight percent, based on the weight of the zeolite, of the vanadium component.

42. (New): A method according to claim 1 in which the product sulfur reduction catalyst comprises a large pore size of intermediate pore size zeolite as the molecular sieve component.

43. (New): A method according to claim 12 in which the product sulfur reduction catalyst comprises a large pore size or intermediate pore size zeolite as the molecular sieve component.